

MARINE REVIEW.

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No. 1.

The Hull of a "Straight-Back."

Below is presented an illustration of the Detroit Dry Dock Company's No. 110, the Mahoning, built for the Anchor Line. The plating and fullness of a hull is not shown to advantage after it is in the water. Same neat plating may be noticed near the stern and if a view of the bow were presented it would be even more noticeable. The length of the Mahoning on water line is 275 feet, over all 293 feet, beam 40 feet and moulded depth 26 feet. Her engines, built by the Dry Dock Engine Works, are 20, 32 and 52 inches by 42 inches stroke. The boilers are 14 feet diameter by 12 feet long, being allowed a pressure of 160 pounds.

A Wonderful Iron Ore Carrier.

Below is a statement of the work of the big steel steamer Maryland during the month of June, just past, in the iron ore trade between Escanaba and South Chicago. The figures are furnished by E. T. Ricketson, general manager of the Inter-Ocean Transportation Company of Milwaukee, to which the Maryland belongs. It is a wonderful showing, as the boat

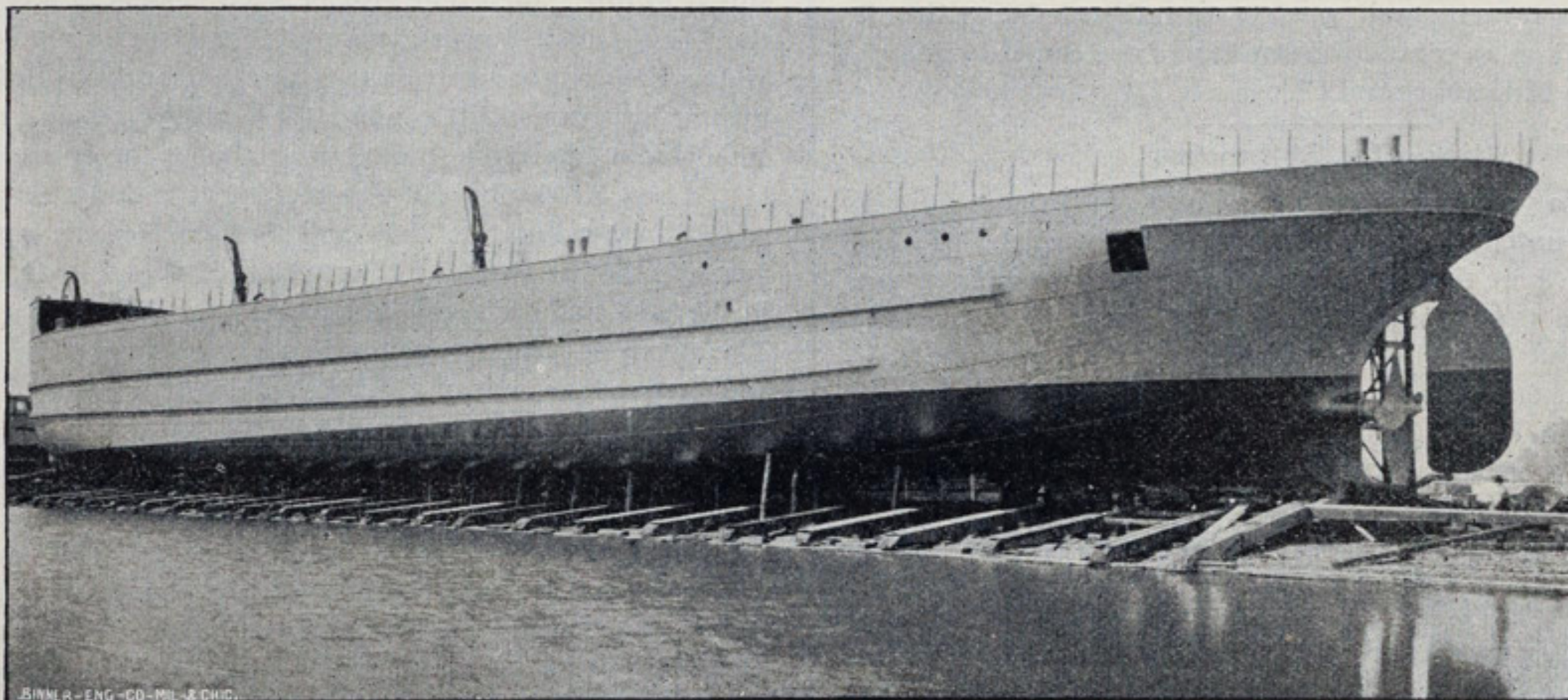
on the lakes in cargoes carried through the rivers, where the draft of water is not equal to that afforded in the Escanaba—South Chicago trade.

The steamer Western Reserve, another one of the big steel freight carriers, built by the Cleveland Ship Building Company, and controlled by Captain P. G. Minch of Cleveland, has just delivered at Ashtabula a cargo of 3,045 gross tons brought down from Escanaba.

Work of the Ship Yards.

The steamer Schuylkill, put into water by the Globe Iron Works Company, Saturday, is one of the three boats building for the Anchor Line. The others having been launched at Buffalo and Detroit. The Detroit boat is shown in an engraving in this issue. Orders for these steamers being divided among different yards has been the cause of builders adding some features not required in the contract. The Schuylkill will differ from her sister ships in her straight back, which has been given enough sheer to prevent the appearance of dropping at both ends. The dimensions are 293 feet over all, 275 feet keel, 40 feet beam, and 26 feet deep.

The last bi-monthly pay roll at the yard of the American



HULL OF THE DETROIT DRY DOCK COMPANY'S NO. 110, THE MAHONING.

loaded in Escanaba during the month eight cargoes, aggregating 27,211 gross tons and averaging 3,401 gross tons. The largest cargo was 3,507 gross tons and the total of miles run about 4,720. Following are the dates of loading and amounts of the different cargoes:

Date of loading	Gross tons.
June 3.....	3,348
" 7.....	3,345
" 11.....	3,342
" 14.....	3,364
" 18.....	3,408
" 22.....	3,439
" 26.....	3,458
" 30.....	3,507
Total.....	27,211
Average cargo.....	3,401
Miles run.....	4,720

Making all allowances for the special trade in which the Maryland is engaged it is doubtful if the work of any other steamboat on the lakes will compare with that shown above. There is, of course, no comparison in the matter of cargoes. The Maryland was built by the Detroit Dry Dock Company in 1890, measures 1892, net registered tons, and is a duplicate of the steel steamer E. C. Pope, which leads all other freight boats

Steel Barge Company footed up \$26,600 and Superior newspapers are accordingly proclaiming the benefits of a ship building plant in their midst. The barges that are to take the place of the "Soo" line steamers Washburn and Pillsbury will be Welland canal size, 265 feet long, 36 feet beam and 22 feet molded depth. The whaleback steamer and consort building for Samuel Mather and others of Cleveland will not be launched sooner than the 15th of the present month.

Cornfield point light vessel No. 51 has left Wheeler's West Bay City yard for the coast. This is the first of the four lightships building by Wheeler & Co for the government. She will be taken through the canals and delivered at Staten Island, N. Y. Her test trial trip was satisfactory to the light-house inspectors, her speed meeting all the requirements.

In view of the work on the twenty foot channel several contracts for dredging outfits have been given lake ship builders. The most recent is one taken by the Union Dry Dock Company, Buffalo, for a tug, dredge and six scows. The whole is to cost \$75,000.

The Jenks Ship Building Company launched a lumber steamer from their yard at Port Huron, Saturday. Her name is Desmond, and she is 148 feet keel, 30 feet beam, 9½ feet deep, and will carry 500,000 feet of lumber.

Lake Freight Matters.

An important feature in the freight market is the fact that iron ore shipments from all Lake Superior mines at this time are about three times what they were on the corresponding date a year ago. This statement, although something of a surprise to even the ore dealers themselves, will hardly have a tendency, however, to cause any change in the present policy regarding shipments, as it is discounted by a number of conditions affecting the iron ore market previous to July 1 of last year and by the aggregate of sales this spring as compared with those of a year ago. Some unsold ore is being brought to Lake Erie ports, but the movement is not extraordinary in comparison with previous years of liberal production. Shipments would in fact be considered very light if the iron market presented any signs of improvement before the close of navigation, but it will be admitted that the question of lake freights for the latter portion of the present season must be considered very uncertain and not encouraging to the vessel owner if based on the iron ore movement.

Moderate shipments of grain still being made from both Chicago and Duluth are the main support of a fairly profitable freight market. Steady coal shipments, with the demand for vessels somewhat in excess of the supply, have also caused the great bulk of the fleet to carry up loads almost constantly since the opening of navigation, and this is a source of considerable assistance to the market. At this time ore freights are strong at \$1.10 from Ashland and Two Harbors to Ohio ports, 95 cents from Marquette and 70 cents from Escanaba, with soft coal rates based on 45 cents to the head of Lake Superior and 55 and 60 cents to Milwaukee and Chicago.

Iron Ore Shipments.

On July 1 a year ago shipments of iron ore from all upper lake ports amounted to a trifle less than 700,000 tons. Today they are about three times that amount. Railway managers at the shipping ports still refuse to give even a report of the tonnage in bulk, but the following statement of shipments from Lake Superior ports will serve to show the extent of increase over last season:

Ports.	Gross tons.
Ashland	664,447
Two Harbors.....	303,614
Marquette.....	196,875
Total Lake Superior.....	1,164,936

The above figures regarding shipments from Two Harbors and Ashland are from the dock managers and are official. The Marquette figures represent the difference between the aggregate from Ashland and Two Harbors and the total movement of iron ore in gross tons through the Sault canal to July 1. Although no statement has been secured from Escanaba, it is safe to say that shipments from that port added to the Lake Superior movement, as shown, will make the aggregate close to 2,000,000 tons, or about three times what it was at this time a year ago.

Ashland shipments, shown in total above, are divided among the different mines as follows: Ashland 67,915 gross tons, Aurora 100,453, Colby No. 2 20,698, Tilden 81,480, Iron Belt 33,446, Montreal, north vein 11,821, Palms 19,673, Anvil, 1,696, Brotherton 30,157, Comet 5,184, Carey 13,040, East Norrie 68,522, Newport 27,517, Norrie 133,543, Pabst 18,536, Sunday Lake 24,609, Windsor 6,131. Of the total shipments from Two Harbors the Minnesota mine contributes 125,200 gross tons and the Chandler 178,414 gross tons.

The Proposed Hill Passenger Steamer.

For two years past Mr. John F. Parkhurst, of the Globe Iron Works Company, Cleveland, has had under consideration plans for a line of costly passenger steamers, intended to meet the requirements of the best class of trade between Buffalo and

the head of Lake Superior. He has sought to interest certain capitalists in the enterprise, notably James J. Hill, president of the Great Northern Railway and the Northern Steamship Company, for whom the Globe company built a short time ago a line of freight steamers that have proved a most satisfactory investment. As a result of a story sent out from Buffalo a few days ago, it has been learned that the Globe company has secured a conditional contact with Mr. Hill, whereby there is some prospect that two boats of the kind contemplated may be built, to be ready for service in July of next season. Mr. Parkhurst refuses to give out as yet any information regarding negotiations for the construction of the boats, but it is more than probable, since it is proposed to establish a company in Ohio for the enterprise, under the name of the Great Lakes Steamship Company, that the understanding with Mr. Hill includes an agreement that a certain amount of Ohio or Cleveland capital will be secured for the undertaking. In previous negotiations for the building of boats of this kind assistance in the way of capital from Cleveland had been assured.

Original plans for these steamers contemplated a boat with passenger cabins so arranged that they might be used only during the summer season, attention to be given to freight business during the fall and spring, but it is understood now that if the boats are built to be operated in conjunction with the Great Northern Railway system they will carry some freight, but will be made equally powerful and costly. Their length will be 340 feet or more, cost \$400,000 each, and passenger accommodations suited to fully 300. The cost of such vessels would necessitate their being made powerful enough to stop for no kind of weather, and as they might be made to make the run from Buffalo to Duluth or Superior in little more than railway time, they would command a passenger trade during almost the entire season.

When Mr. Hill put a line of freight boats into the trade between the head of the lakes and Buffalo, it was said in some quarters that he would not secure profitable railway connections in the east, and that the undertaking would prove a failure. The advantages of modern steamers were soon felt, however, and the management of the line is now in a position to rule in freight matters. Equal success seems certain to follow with a passenger line established and operated after the same policy.

Lake Superior Passenger Traffic.

With negotiations pending in Cleveland for the construction of two big passenger steamers, there is again considerable talk of profit in the passenger business on Lake Superior. It is admitted that the present service is altogether inadequate, but lake vessel owners who might be expected to build suitable boats for this trade have been deterred from doing so largely on account of the short season afforded for a tourist business. It has been proposed to build boats with cabins so arranged that they might be removed and the vessels applied to freight traffic during the fall and spring. This plan is entirely feasible but the objection to it is the extra cost of driving a big hull with no freight at high speed during the passenger season. Such boats built during the coming winter might however, be run during the world's fair rush next season from Buffalo to Chicago. There is no doubt of a profit in the world's fair trade and the boats could afterward be turned onto Lake Superior. In time past when attention was given to Lake Superior passenger business and traffic arrangements made with numerous railways, boats were known to gross \$12,000 in a single trip, and there seems to be no reason now why a similar business well conducted can not be made profitable.

No legal action has as yet been taken with reference to the Pringle-Morse collision, although it is not at all probable that a loss like that on the Morse will be settled without a contest in the courts.

Lake Carriers' Association.

M. A. BRADLEY, President.

VICE-PRESIDENTS: { James W. Millen, Detroit, Mich. John G. Keith, Chicago, Ill.
 Frank J. Firth, Erie, Pa. W. S. Brainard, Toledo, O.
 Thomas Wilson, Cleveland, O. R. P. Fitzgerald, Milwaukee, Wis.
 Peter F. Miller, Buffalo, N. Y. Alex. McDougall, Duluth, Minn.
 Charles H. Keep, Secretary, Buffalo, N. Y. Geo. P. McKay, Treasurer, Cleveland, O.
 Harvey D. Goulder, Counsel, Cleveland, O.

CASE OF COL. LUDLOW AND COMMANDER HEYERMAN.

Although the visit to Washington of Vice-president H. M. Hanna and Secretary C. H. Keep, of the Lake Carriers' Association, in the interest of Col. William Ludlow and Commander O. F. Heyerman, who were relieved of light-house duty on the lakes by the light-house board, did not result in these officers being granted a hearing by the board, it has prompted a careful investigation that has convinced the association more than ever that the suspension was the result of a misapprehension as to the acts and intentions of Messrs. Ludlow and Heyerman. Within the past ten days the same officers of the association who visited Washington and consulted Secretary Foster, of the treasury department, have made, in company with other leading members of the organization, a most searching investigation of the whole matter, and the result of their inquiry will be presented in a very emphatic manner to the proper authorities. Being convinced that Col. Ludlow and Commander Heyerman acted in good faith and for the best interests of the service, and having the highest regard for their integrity and ability, the association is bound to give the suspended officials its utmost support.

The last issue of the REVIEW contained a Washington letter giving a statement of the case as prepared by some officer of the light-house board and purporting to be a statement from that body. In it the case is without doubt grossly misrepresented, as the facts gathered here will show. A garbled display of the correspondence makes no reference to important telegrams, in which the officers on the Sault river explained in good faith the numerous objections to the obstinate position taken in the Washington office of the board, and asked for orders to proceed to Washington for a consultation. Honest efforts on the part of the district officers to show when it was thought that the matter of expense stood in the way, that the extra lights on the river could be maintained at a cost largely within the amount anticipated, are also suppressed in this statement, and it is altogether misleading and very unjust. Only one feature of the correspondence passing between the district officers and the board, that part of it quoting the law against displaying false lights, might in any way be construed as tending toward insubordination, and it will readily be admitted that even this was not at all out of the way when it is known that the officers had reference to their own position and not that of the board in quoting this law; and then, too, their removal had been asked for before this telegram was received in Washington. It may be announced before this case is finally disposed of, that a matter of more importance to lake shipping interests than the re-instatement of these officers demands the attention of the light-house board, but it is probably well to await developments before a great deal is said on the subject.

Norwegian Viking Ship.

The Norwegian Viking ship, which it is proposed to exhibit at the World's Columbian Exposition, will be sailed from Christiania to America. The project is, however, regarded as hazardous, notwithstanding that a committee of eleven experienced ship's captains, to whom the question of the feasibility of the idea was submitted, have declared that it is quite capable of execution. The crew will be strictly limited to the number of men requisite to navigate the vessel across the Atlantic, though the full equipment will be made up with Norwegians on the ship's

arrival at Chicago. Not less than thirty rowers will be required to man the ship for the voyage. It is intended as far as possible, to accept the services of none but educated men, who may be able to take part in the compilation of an account of the voyage, which is to be published immediately after the vessel's arrival in America, the proceeds of which will be used to build a Norwegian sailors' home in New York. Another book to be compiled by the same party will treat of a Norwegian settlement in America 400 years before Columbus.

Mr. Thompson on the Canal Toll Question.

S. A. Thompson, secretary of the Duluth chamber of commerce, had a hand in preparing Senator Davis's bill proposing retaliation in the matter of canal tolls between Canada and the United States. He says, with reference to the bill:

"One thing I wish the vessel interests especially to understand: That is, that the fundamental object in the preparation of this bill was not to saddle a load of tolls and restrictions upon the vessel business at the Sault canal, in addition to those now in existence at the Welland canal. The intention was to frame a measure, the obvious effect of which would be so unendurable to Canadian interests that they would never allow it to go into effect at all. When the statement appeared in the papers that the president was about to send a message to congress advising retaliation, as one of the officials of the state department expressed it, 'It was not half an hour until the British minister was down to see Mr. Blaine, sent by an urgent telegram from Lord Stanley, asking him to find out what the Yankees wanted and promising that members of the Canadian cabinet would negotiate in regard to the matter.'

"They came, and their negotiations amounted to nothing. Now it is my desire and expectation if this bill shall become a law, that the next time they come to negotiate we shall have the whip hand; that we shall not be content merely to insist that they shall observe the spirit of the treaty which they have violated so long while they claimed to have observed the letter, but we shall be in a position to compel them to give concessions very much greater than were contemplated or sought to be secured in that treaty, in order to prevent the withdrawal of the privileges which they now enjoy at the Sault canal. If the government takes the stand in this matter which I expect will be taken, we can practically compel them to give us the free use of the Welland canal and allow our goods to be unloaded for American ports at the port of destination. At the same time we must consider the possibility of the act going into effect and therefore it has been framed with the object of throwing business to American ports and American vessels where it will not need any change at all, and putting the burden not merely on Canadian vessels but upon all Canadian merchants doing business at American ports.

"There is one other point on which I have changed my opinion somewhat on a further study of the language of the treaty. I think it will be possible to put a burden upon Canadian commerce at the St. Clair Flats canal also, although it will necessarily put more or less burdensome restrictions upon our own vessels, which it is desirable to avoid unless it becomes an absolute necessity."

The Brown Hoisting and Conveying Company of Cleveland has built a coal-storing shed at Buffalo for the Reading Railway Company, that has a roof 672 feet long, 354 feet wide and covers 5½ acres. A writer in Cleveland contrasts this with the roof over St. Pancras station in London, which is 690 feet long, and 245 feet wide, but there is no comparison in the case. The St. Pancras roof is one span without central support, while the one at Buffalo, being for a coal-storing shed, has numerous supports and might just as well cover 10 or 20 acres as 5½. Enormous roofs of one span are seldom if ever necessary and are commonly constructed for architectural display. Plans for a single span roof were prepared for the Sutro Baths at the Cliff House, but Mr. Sutro has wisely concluded to avoid the risks of such a structure.—Industries, San Francisco.

The editor of the MARINE REVIEW has examined Patterson's Nautical Dictionary thoroughly, and with pleasure recommends it to any one having any connection with marine affairs.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 13 Western Union Building, CHICAGO, ILL., July 7.

Notwithstanding all promises to the contrary, the Chicago grain trade is not doing much for the boats, and most vesselmen are not sanguine over the outlook for immediate business. The grain market seems bent on getting out of line for shipments, and shipments do not stay in line much over a couple of days at a time. The future is all guesswork, and altogether too vague to attempt prediction.

The great event this week among marine men has been the war over the possession of dock facilities at the foot of Van Buren street for the excursion steamers, which have long done business there. The trouble culminated Tuesday in a pitched battle between the police and steamboat owners, but in the end the steamboat men might be said to have been victorious. The fact seems to be that the so-called syndicate, which was given the exclusive privilege of landing passengers at Jackson park, where the world's fair is to be held, made a serious mistake in inspiring the world's fair directors to make the effort to evict the steamboat men. The game was not worth the struggle. The eviction called attention in the most forcible way to the monopoly features of the syndicate's franchise and at once aroused strong public sympathy for the outside excursion boats. At best there are very serious legal doubts as to the validity of the contract made by the world's fair directors with the syndicate. Robert Rae, than whom perhaps no better authority can be found on the great lakes on these questions, has been outspoken for months in his belief that the courts would upset the contract as soon as it was brought before them.

The steamboat men were divided among themselves, and it would have been nearly impossible for them to have acted together had not some such effort as that of premature eviction been taken against them. This drove them all together, and they are now in shape to make a determined fight upon the franchise. Had the syndicate acted more wisely it would have got its building material upon the ground before starting in, that is if the excuse that the room where the boats now are is wanted for piers, is valid. The excursion boat owners say that there is nothing in this excuse and that the room is wanted for the two small steamers which now form the fleet of the syndicate. As a matter of fact, there is such a wide discrepancy between the flamboyant promises of Mr. Henry when he received this contract and what has actually been done, that the plans of the company can best be judged when they materialize. At any rate, whatever the plans may be, the syndicate has made a very bad move in stirring up public sentiment against itself, and has rendered its future work all the more difficult, particularly if the franchise itself is to be attacked in the courts as the result of Tuesday's evictions.

Another Grain Route to the Seaboard.

Special Correspondence to the MARINE REVIEW.

At last a lifeboat scheme has been launched at Toronto. The naval brigade has decided to build a craft after the style of the life cutters of England. She will be 32 feet long, 8 feet 1 inch beam and 3½ feet deep. She will be air tight at each end and along the sides and be supplied with masts, sails, life buoys and cork fenders, and have a crew of twelve with coxswain, all of whom will have oil skins and cork jackets. A station will be equipped on one of the docks, at which a man will be continually on duty. There are nearly 300 in the brigade, some seventy of whom are uniformed and drilled regularly. Many of the members have served on both sea and lake.

The Seamen's Union has entirely lost the slight foothold it had here, and this year, it is safe to say, there is hardly a union man in Kingston. The shoveler's union has also disappeared, but the men appear to be making better wages than ever before.

KINGSTON, Ont., July 7.—For many years the Canadian Pacific Railway has been endeavoring to gain a direct entrance to New York state and a quick route to New York city. Governor Flower of New York has been here for several days going over the K. & P. Railroad with the Canadian Pacific officials with a view to leasing the former line to the latter company. Mr. Flower is a large stockholder in the K. & P. Railroad. If arrangements are made the next step will be the bridging of the St. Lawrence at this port, in which enterprise the New York Central will join. Then wheat can be shipped from the northwest and sent straight through to New York for export. The carrying out of this project would relieve both the St. Lawrence river and the Erie canal routes of much trade, and afford facilities for sending grain through to the seaboard in much shorter time than is occupied at present. Forwarders are vigorous in disapproving of the scheme. While it will reduce the river trade, they claim that the bridge will make navigation dangerous, particularly for tows.

The corporation of the town of Prescott, situated about fifty miles nearer Montreal than Kingston, has offered one of the forwarding companies here \$100,000 and a large wharf if it will remove its transshipping plant from here to that place.

The old whaler Progress has passed here on her way to Chicago where she will be exhibited at the world's fair. The Progress was built about fifty years ago and was always considered a lucky ship. She was one of the five whaling vessels that returned to New Bedford from the ill-fated expedition of 1871; and is probably the last of the old fashioned "spouters." She is rigged

with a full whalers' outfit of boats, try pots, etc. The cabin is a regular museum of whaler's curiosities. At Montreal her keel was removed so that she could pass up the canal. All along the line crowds of people assembled on the wharves to see her.

E. R. Holden, president of the Delaware & Hudson Railway, has reached here with a \$25,000 steam yacht called the Lotus Seeker. She is 72 feet long, has 10½ feet beam and is of the Hereschoff build. Her owner states that she can go 22 miles an hour, which is fully 8 miles faster than the speed of any other steamer on the St. Lawrence.

It is estimated that since the season opened forwarding facilities for fully one million bushels of grain had to be refused owing to the lack of storage. This will give an idea of the extent of the rush here during April and May. Even if accommodation could have been afforded here, the grain could not have been taken at Montreal, as the glut still exists there.

Powerful Flash Light.

Special Correspondence to the MARINE REVIEW.

WASHINGTON, D. C., June 23.—The light-house board is in receipt of information relating to a magnesium flash light which, it is said, is going to prove far superior to anything now in use for light-house purposes. The light, which was devised by Prof. Schirm of Berlin, Germany, is produced by blowing a small quantity of magnesium powder with a current of air that has previously passed through pumice stone saturated with benzine into a benzine gas flame. The flash produced is exceedingly intense. With the use of ten centigrams of magnesium powder, it is stated that a flash of 400,000 candle power can be produced, which can be seen on a clear sunshiny day at a distance of 6 miles. This flash light, in addition to its being very much more powerful than any known electric light, is far better adapted to light-house purposes on account of its rays lying in the red and yellow portions of the spectrum, instead of in the blue portions, as is the case with the electric light. The light-house board, after an examination of the report sent to it through the courtesy of Capt. Bingham, corps of engineers, military attache at Berlin, was so favorably impressed with the light that it has decided to order an apparatus to be used in experiments at the general depot at Staten Island, N. Y. It is expected that this apparatus will arrive in the course of the next two months.

The house committee on naval affairs has ordered a favorable report on a bill prepared by the committee providing for the transfer of the revenue cutter service from the treasury department to the navy department. The committee will make an effort to secure a day for a hearing on the bill.

It is understood that the conferees of the senate and the house on the river and harbor bill have reached an agreement on all the senate amendments to the bill except two, which are the Lake Washington canal project and the Columbia river boat railway project. On these the conferees were unable to agree.

Minnesota Point Bridge.

Special Correspondence to the MARINE REVIEW.

SUPERIOR, Wis., July 7.—Congressman H. W. Bentley's (New York) bill providing for a bridge over the St. Louis bay from Connor's to Rice's points has called out bitter protests from certain Superior people, who charge that the bridge would detract business from Superior to the benefit of Duluth. Such an objection will not carry much weight, but the question of the rights of shipping interests in the matter of bridge obstructions will, of course, act against the passage of the bill.

The whaleback Thomas Wilson is establishing a reputation as a heavy carrier. Her last cargo of wheat—94,454 bushels—was exceeded only by 5,000 by the cargoes of the steamer S. L. Tilley and her three consorts.

Lieut. J. C. Moore of Detroit has been in the city on the matter of the proposed government life saving station to be erected at Minnesota point at a cost of \$15,000 exclusive of equipment.

Record of Speed and Big Cargoes.

[Masters or owners are invited to report improvements on this list.]

Iron ore: Lake Michigan—Maryland, Inter-Ocean Transportation Company of Milwaukee, 3,507 gross, or 3,944 net tons, Escanaba to South Chicago; E. C. Pope, Eddy Bros. of Bay City, 3,239 gross, or 3,628 net tons, Escanaba to Buffalo, draft 16 feet.

Grain: E. C. Pope, Eddy Bros. of Bay City, 125,730 bushels of corn, Chicago to Buffalo, draft 14 feet 8 inches; Western Reserve, Peter Minch of Cleveland, 112,431 bushels of wheat, Chicago to Buffalo; W. H. Gilcher, J. C. Gilchrist of Cleveland, 114,982 bushels of corn, Chicago to Buffalo.

Speed: Owego, Union Line of Buffalo, Buffalo to Chicago, 889 miles, 54 hours and 16 minutes, 16.4 miles an hour; Saranac, Lehigh Valley Line of Buffalo, Buffalo to Lime-Kilns, 240 miles, 15 hours and 10 minutes, 16 miles an hour.

SEND 50 CENTS IN STAMPS TO THE MARINE REVIEW FOR TEN PHOTOTYPES AND GRAVURES OF LAKE STEAMERS NEATLY BOUND.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St. Cleveland, O.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company.....	\$100 00	\$.....	\$ 75 00
Champion Iron Company.....	25 00	.....	60 00
Chandler Iron Company.....	25 00	42 00	45 00
Jackson Iron Company.....	25 00	.....	100 00
Lake Superior Iron Company.....	25 00	43 00	45 50
Minnesota Iron Company.....	100 00	.....	75 00
Pittsburgh & Lake Angeline Iron Co....	25 00	.....	145 00
Republic Iron Company.....	25 00	.....	18 00
Ashland	25 00	.....	.....
Section Thirty-three.....	25 00	.....	7 50
Brotherton.....	25 00	2 00	2 50
Iron Belt.....	25 00	.....	2 50
Aurora.....	25 00	8 25	.....

At Section Thirty-Three the management is about to begin work with a diamond drill in a crosscut made at a depth from the surface of about 630 feet. There is no ore in the present bottom, and it is thought best to fully test the ground with the drill before resuming sinking of the shaft.

A force of 200 men is at work stripping the Biwabic, leading Mesaba property. Open or surface mining will be employed exclusively. There will be no underground shafts or drifts, at least not for a long time. "When we get to mining," says one of the managers of the company, "we shall make a cutting similar to a railway cut into the ore body. In this cut we shall lay a standard gauge track and put in position a steam shovel. If we find the ore body to dense to be mined and loaded on cars directly by the shovel, we shall use black powder and loosen it up in lots of 3,000 to 4,000 tons."

Michigan papers announce that the new Huron Bay railway will be extended from Champion to Ishpeming and Negaunee.

Since Ferdinand Schlesinger regained control of the Chapin, the working force has been increased somewhat, and the daily product is reported above 2,500 tons with shipments close to 5,000 tons daily.

The Chapin management is said to be figuring on securing a lease of the flooded Ludington. It is thought that the Chapin could relieve the mine of water and operate it more advantageously than the present owners.

The Chandler management is said to be figuring on a purchase of the Pioneer mine, which adjoins the Chandler property, and from which some ore was shipped during two or three seasons past. Rumor has it that a continuation of the Chandler vein has been found by the owners of the Pioneer.

It seems strange that Pennsylvania capitalists should agree to pay big royalties on the new Mesaba, while the tendency among the producing companies of the older ranges is to demand a reduction of this charge on renewal of leases. At the annual meeting of the Pittsburgh and Lake Angeline Company in Cleveland, last week, it was decided to reduce the royalty on ore taken from the Mitchell mine. The Winthrop Iron Company is operating the Mitchell under a lease from the Lake Angeline company at a royalty of forty cents a ton. The greater portion of the output of the Winthrop company comes from its Mitchell workings, and the ore has always found a ready market, but the general change in conditions surrounding the ore business demands a reduction in royalty. The extent of the reduction has not as yet been decided upon.

Appropriations for 1893, as reported to the Canadian parliament, include the following items for rivers and harbors in Ontario: Trenton harbor, dredging, locality providing \$2,000, \$3,000; Belleville harbor works, the local authorities furnishing \$2,000, \$3,000; Toronto harbor, works at eastern entrance, etc., the city of Toronto having contributed \$100,000, \$75,000; Owen Sound harbor, dredging, \$15,000; Port Albert repairs to north pier and towards extension of piers and dredging, \$8,000; Goderich harbor, dredging, \$15,000; Rainy river, improvement to Long Sault rapids, additional amount required, \$2,200; River Beaudette, improvement of river by cleaning out channel, \$5,000; Port Rowan, wharf, \$6,000; Midland harbor, dredging, \$2,500; Penetanguishene, dredging, \$2,500; Port Arthur, dredging, \$5,000. The total amount for Ontario is \$142,200.



Dredging at Green Bay harbor has increased the draft of water to fourteen feet.

William H. McPherson, whose death is announced from Buffalo, was well known to vessel masters visiting that port.

The steamer Progress, sunk at Mamajuda island, Detroit river, has been sold to the Detroit Dry Dock Company for \$11,500.

Shipments of anthracite coal from Buffalo to the end of June were 759,931 tons, against 812,290 tons last year. Though shipments during June just past have been active, they were about 25,000 tons less than during June in 1891.

Thomas M. Murphy, of Detroit, has purchased the schooner M. I. Wilcox, and will use her as a lighter in wrecking business. The Wilcox was built by Bailey, of Toledo, in 1868, is rated A2, and measures 359 tons. The consideration was \$6,000.

The schooner S. B. Pomeroy, which was burned on Lake Ontario last season and afterward raised by Baker Brothers, has just come from Dulac's yard at Mt. Clemens, where she was thoroughly rebuilt at an expense of \$6,000. She belongs to the Tonawanda Barge Line, and will join the Canisteo's tow.

The United States marine hospital service has issued a circular to medical officers and acting assistant surgeons in the districts of the great lakes and Ohio and Mississippi rivers instructing them to vaccinate the beneficiaries of the service. The officers are directed to personally or through the detail of an assistant see that vessels arriving in port are looked after.

Changes now being made at the Milwaukee Dry Dock Company's south yard are calculated to make room for the introduction of a plant for the construction and repair of steel vessels. A plant in connection with the dry docks of this company for the repair of steel vessels would not, of course, be very expensive, but the heavy cost of machinery and general facilities for constructing steel boats would seem to make that part of the proposition rather indefinite.

Vessel masters and owners who have boats 2,000 tons and upwards, express surprise that the Big Four Railway, having a costly plant for the shipment of soft coal from Cleveland, does not cause a little dredging to be done in its slip up the main river. This class of vessels will, of course, avoid loading at these docks whenever it is possible to do so, as the rapid work done at the dock is of little avail when only a partial load can be taken out of the slip, on account of the light draft of water.

Captain McKay, of the passenger steamer Greyhound, who was charged in the United States court at Detroit with having passed a steamer going in the same direction through the St Clair canal, explained that the Greyhound had reached the upper end of the piers before attempting to pass the barge and it was necessary to increase the boat's speed at that time and place to keep her from sagging onto the cribwork at the head of the west pier. No testimony was presented for the prosecution and the hearing was postponed.

Empire Transportation Company is the name of the corporation owning the big steel steamer Gilbert, recently launched by Wheeler & Co. of West Bay City. The capital stock is \$200,000, one-half of which is preferred, bearing semi-annual cumulative dividends of 6 per cent. per annum. Ten per cent. of the capital stock is paid in. The stockholders are Willis H. Gilbert, Saginaw, 160 shares; Augustus B. Wolvin, Duluth, 80 shares, and Granger A. Hollister, Rochester, 160 shares. The office of company will be at Wyandotte, Mich.

Minneapolis, St. Paul & Buffalo Steamship Company is the name of the new corporation controlling the package freight whalebacks Washburn and Pillsbury. The officers are: Senator Washburn, president; Fred Underwood of the "Soo" road, vice-president; W. L. Martin, treasurer and H. L. Shute, traffic manager. R. B. Hebard is the general manager at Buffalo, and W. S. Braun general agent at Gladstone. Capt. T. McFarlane, for years a commander in the Lehigh Valley Line, will have command of the Washburn, and Capt. Wm. Cavers, a well known vessel master on the lakes, is to command the Pillsbury.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, } PROPRIETORS.
F. M. BARTON, }
HOMER J. CARR, Associate Editor and Manager Chicago Office,
Western Union Building, 110 LaSalle Street.

Published every Thursday at No. 516 Perry-Payne Building, Cleveland, O.

SUBSCRIPTION—\$2.00 per year in advance. Convenient binders sent, post paid, 75 cents. Advertising rates on application.

The books of the United States treasury department contain the names of 3,600 vessels, measuring 1,154,870.38 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The number of vessels of 1,000 to 2,500 tons on the lakes on June 30, 1891, was 310 and their aggregate gross tonnage 512,787.58; in all other parts of the country the number of this class of vessels was, on the same date, 213 and their gross tonnage 319,750.84. The classification of the entire lake fleet is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,592	756,751.53
Sailing vessels.....	1,243	325,131.06
Canal boats.....	703	72,515.42
Barges.....	62	20,472.37
Total.....	3,600	1,154,870.38

Tonnage built on the lakes during the past five years, according to the report of the United States commissioner of navigation, is as follows:

	No. of boats.	Net Tonnage.
1887.....	152	56,488.32
1888.....	222	101,102.87
1889.....	225	107,080.30
1890.....	218	108,515.00
1891.....	204	111,856.45
Total.....	1,021	485,042.94

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

Entered at Cleveland Post Office as Second-class Mail Matter.

THROUGH loyalty to a Kingston constituency, the late Sir John Macdonald caused the establishment of the system of tolls on the Welland canal that is now demanding the attention of the United States government. Every fair-minded citizen of the Dominion will admit that the system of tolls has since been maintained through the influence of canal forwarders at Kingston, in whose interest it was established. The history of the whole question shows this, and it is admitted in Montreal and other places where Canadian shipping interests are not directly benefited by the canal rebate. President Harrison was right then in saying to the United States senate in a second message a few days ago that this system of tolls is in direct violation of treaty stipulations, and that it is deserving of immediate attention from congress. No settlement based on a rebate for grain transhipped at Ogdensburg only, should be listened to. Full and free use of the Welland and St. Lawrence canals on an equality with the privileges now granted Canadian commerce through the St. Mary's Falls and St. Clair canals should be the only basis of settlement.

THE Canadian government is said to have in contemplation a vigorous policy looking to the completion of a fourteen-foot chain of navigation from tidewater to Lake Superior by July 1, 1894. Interest on this side in the question of a seaboard outlet from the lakes has undoubtedly prompted Canada to consideration of such a policy. A decision in the matter can not come too soon to suit American interests on the lakes. It would be the means of forcing our own government to a realization of Canada's advantages in the St. Lawrence as a highway of commerce.

ALTHOUGH the conferrees on the river and harbor bill reached an agreement some days ago, the filibustering policy of the small house minority opposed to the measure resulted in delay until Wednesday its final passage. Chairman Blanchard of the house

committee says, however, that the bill will be a law within ten days, and there is every reason for believing that he knows what he is talking about. Lake items in the bill have not been materially changed in conference.

ANNOUNCEMENTS from both the Canadian and United States governments declaring reciprocal wrecking privileges in effect as a result of recent legislation in Canada on the subject, are very probably delayed on account of the differences that have arisen in the negotiations on the subject of reciprocity generally.

Grain at Chicago and Duluth.

Stocks of grain at Chicago and Duluth on Monday, July 4, were as follows:

	Chicago.		Duluth.
	Wheat, bu.	Corn, bu.	All wheat, bu.
In store.....	4,953,000	3,743,000	3,908,000
Decrease last week.....	803,000	.....	352,000
Increase last week.....	.....	152,000	.....
Excess over same time last year..	4,550,000	2,760,000	2,010,000

In addition to the above there is 1,064,000 bushels of oats, 98,000 bushels of rye and 19,000 bushels of barley in store in Chicago.

To Revise Inspection Laws.

From an article by Walter MacFarland, chief engineer U. S. N., in the Journal of the American Society of Naval Engineers, it is evident that the marine interests of the country may expect at the next session of congress a renewal of the effort made some time ago through the Frye bill to revise the laws governing the inspection and management of sail as well as steam vessels. Mr. MacFarland was one of the board of experts interested in the preparation of the Frye bill, and his article in the journal referred to is in the nature of an explanation to members regarding matters leading up to the preparation of the bill. He says that in explanation of Senator Frye's action in introducing the bill before it had been sent for criticism to those most interested, that this method was adopted as the surest for securing earnest and exhaustive comment. Mr. MacFarland still invites comment and criticism of the bill from members of the association.

Treasury Department Decisions

While making preparations for the building of whaleback vessels at its new ship yard in the town of Everett, Wash., on Puget sound, the American Steel Barge Company carried on an interesting correspondence with the treasury department, relative to the free entry, under section 8 of the act of Oct. 1, 1890, of materials and machinery for use in the construction of vessels. The act relates to vessels built for foreign account or vessels to be used in the foreign trade but does not permit of the employment in the United States coasting trade of vessels built under such exemptions. The department makes answer as follows relative to one inquiry from the barge company: "Your first inquiry, as to whether rivets, iron or steel, can be considered as included in section 8, must be answered in the negative, since rivets are not named in said section of law. Your second inquiry, as to whether materials enumerated in section 8 can be imported free of duty whether they are to be used in the construction of the hull or of the engine and boilers, must be answered in the affirmative. Your third inquiry, as to the articles which are generally covered by the term 'equipment' as used in said section of law, is answered by the inclosed copy of a report received from the secretary of the navy, wherein the opinion is expressed that the term 'equipment' would not include donkey engines, pumps, windlasses, steam steerer and other machinery, but would include anchors, chain cables, boats, life-saving apparatus, nautical instruments, signal lights and similar articles. In reply to the concluding paragraph of your letter, I would state that any arrangements regarding the storage, etc., of articles imported in excess for one vessel to be kept on hand and used in the construction of subsequent vessels, must be made with the collector of customs at the port of importation."

Among the letters of instruction for April and May to collectors of customs is one calling attention to the act of May 11, 1892, establishing subports of entry and delivery at Superior, Wis., and Ashland, Wis.

A Bark in a Hurricane.

Winds of sixty miles velocity are seldom experienced on the lakes, and the following description of the behavior of the bark *Ieac L. Skolfield*, of Brunswick, Me., in a 120-mile wind in a harbor of Mauritius island, will therefore be interesting:

"On Thursday the weather looked dirty and squally, and the barometer was on 29.92 degrees. There was a heavy sea heaving in on the outer reef and it kept increasing during the night. At 3:30 A. M. the glass started down to 29.85. I called all hands and put heavy luff-tackles on after chains, a new six-inch line to receive the bitts, and a new nine-inch hawser out amidships on our after chains, outside of all, and took in all awnings. Royal and topgallant yards were sent down and fore and lower top-sail yards. At 7 A. M. we were all snug and thought we could stand anything. The glass dropped to 29.60 degrees and the wind began to increase very fast with a heavy rain. Our starboard chock and rail gave away and we began to drag over to the reef, about 100 yards. One schooner had fouled us but we held on well. All the other ships were coming in collision and cutting each other up. The glass was still going down and the wind blowing a hurricane. Four vessels had taken ground and a French bark parted. Everything came past us like a bird, and drove high and dry up. The barometer was then down to 27.92.

"I thought I had seen it blow before but I never had. It came out like a shot from a gun. We could only lay flat on deck and hold on. I have heard the wind whistle but this fairly shrieked like a steam whistle. My bitts, tackles, hawsers and sails went like carrots. The spanker boom came round and hit the topmast backstays, breaking the boom and twisting the mizzenmast head. On the first burst we were heading toward a steamer, and I thought we would cut her in two, but we took a sheer and struck her forward and stove her up there. She carried away our bobstays, figure-head, cut water and jibboom. Then down came the fore topgallant mast and topmast head, breaking the upper topsail in falling. We were fast to government mushroom anchors forward and had our anchors aft on 45 fathoms of chain. After everything went aft, one of my bow chains parted and the other is under us now.

"The wind kept up at that fearful rate for about two hours. At the observatory it registered 121 miles per hour and then began to moderate. We did not know where we were as you could not see 30 feet. At 8 o'clock it cleared up and I found we were in the northeast part of the harbor, our quarter over a stone road that leads from the fort to the town. We were drawing 14 feet 5 inches and are now in 3 feet 3 inches sand and coral bottom. A stone wall of masonry 6 feet high and 2 feet thick could not stand the pressure of this hurricane."—*Industrial Journal*.

In General.

Davidson's three big wooden steamers now nearing completion at West Bay City will each have but a single pole spar.

Captain John McCarthy will sail the Anchor Line steamer *Codorus*, now being fitted out at the yard of the Union Dry Dock Company, Buffalo.

Capt. Thomas Maytham of Buffalo has sold the tug *Medina* to Barker of Superior. The *Medina* came out in 1890 and is valued in the Lloyds at \$10,000.

The double-turreted sea-going monitor *Miantonomoh* was steered by electricity during her voyage to Norfolk, making the first run by an American ship so steered.

William D. is the name of a harbor tug 83 feet long, launched at Ashtabula on Saturday last and owned by Capt. William Downs of the Ashtabula Tug Association.

Augustus Ames, for three seasons mate on the steamer *Geo. T. Hope*, has succeeded Capt. Ryan as master of the Detroit steamer *Byron Whitaker*. Capt. Ryan retires on account of poor health.

The progress of ship building from earliest times up to the present will be shown by an extensive exhibit which will be made at the World's Columbian Exposition by Laird Bros., the English ship builders, of Birkenhead.

Trade Notes.

The Sheriffs Manufacturing Company of Milwaukee has received orders for wheels for the Vandalia Line steamers *Minnie M.*, *Soo City*, *Ossifrage* and *Lora*.

The E. P. Allis Company of Milwaukee, several leading lake engine builders, and machinery concerns as far west as Montana are using the special grade of facing made by the Cleveland Facing Mills. There is no limit to the extent of trade in a good article of this kind for foundry use.

Within a few months past the Manistee Iron Works Company has compounded and built new engines for the steamers *Philetus Sawyer*, *Hattie B. Pereue*, *Francis Hinton*, *John Leathem* and *Roanoke*. The engine for the latter has not been placed in position, but will be inside of a couple of weeks.

Samuel Woodhouse, Newburgh, O., makes most of the chain used by the McMyler Manufacturing Company on their derricks, and the Marion Steam Shovel Company for their wrecking cars. He has sufficient orders to last for some time, most of them being from companies to which he has furnished chain for a number of years.

In the building of the steam yacht *Comanche* the Globe Iron Works Company of Cleveland will take pride in presenting her as a lake built yacht in every particular. The stationary furniture, made in the department of the works devoted to that line, will be a most elegant feature of the boat. J. W. Grover & Son of Cleveland will furnish sails, rigging and all parts of the boat's fit-out coming within their line.

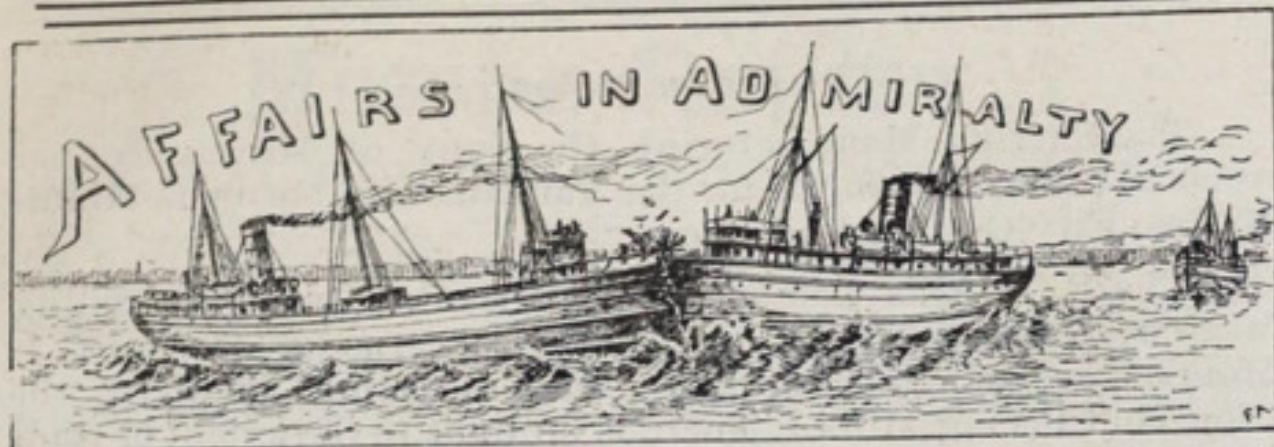
The Continental Iron Works, Brooklyn, N. Y., has issued a neatly printed book full of information of corrugated furnaces. A supplement included contains the rule adopted by the United States supervising inspectors Oct. 10, 1891 for calculating pressures allowable on corrugated furnaces. For 160 pounds pressure the furnace must be 3 feet 3 inches inside diameter and 15-32 inch thick. Send address on a postal, mentioning the REVIEW, for a copy of it.

The Roberts Safety Water Tube Boiler Company of No. 18 Cortlandt street, New York, and Red Bank, N. J., are rapidly approaching their five hundredth boiler. Sales during the past season number about 150 boilers. The company is now building boilers of about 40 square feet of grate for the Titusville Electric Light Company, for Ross & Sanford's tug *Margaret J. Sanford*, and a large boiler for a Pacific coast steamer owned at Portland, Ore. Among the yachts recently furnished with large boilers is the *Fra Diavolo*, owned by Mr. Ed Stokes. A boiler with about 24 square feet of grate for a new fast steam yacht on Lake Champlain, owned by Kellogg & Averill, has also been turned out recently.

Great Britain's Shipping in 1891.

Statistics of Great Britain's shipping for 1891 are just being published. The vessels entered at ports of the United Kingdom during the year numbered 372,150, with an aggregate tonnage of 85,692,637 tons, as compared with 370,075 vessels, with an aggregate tonnage of 84,574,324 tons in 1890. The vessels cleared in 1891 numbered 340,802, with an aggregate tonnage of 81,142,105, as compared with 339,446 vessels, with an aggregate tonnage of 79,766,033 tons, in the preceding year. The foreign trade tonnage shows a slight, but only a slight, increase as compared with the preceding year, the entrances being 36,859,015 tons in 1891, as compared with 36,835,712 in the preceding year, and the clearances were 37,953,605 tons, as compared with 37,443,157 tons in 1890. A greater proportionate advance is noted in the coasting trade, which shows a total of 310,770 vessels, of 48,833,622 tons, entered in 1891, as against 307,240 vessels, of 47,738,612 tons, in 1890, and 278,600 vessels, of 43,188,500 tons, cleared in 1891, as compared with 276,270 vessels, of 42,317,876 tons, in 1890. London continues to hold the first place as regards the amount of tonnage entered and cleared, Liverpool coming second and Cardiff coming third. One feature disclosed by the shipping returns and upon which there has been considerable comment is the tendency to an increase of the foreign element among the crews of the British ships.

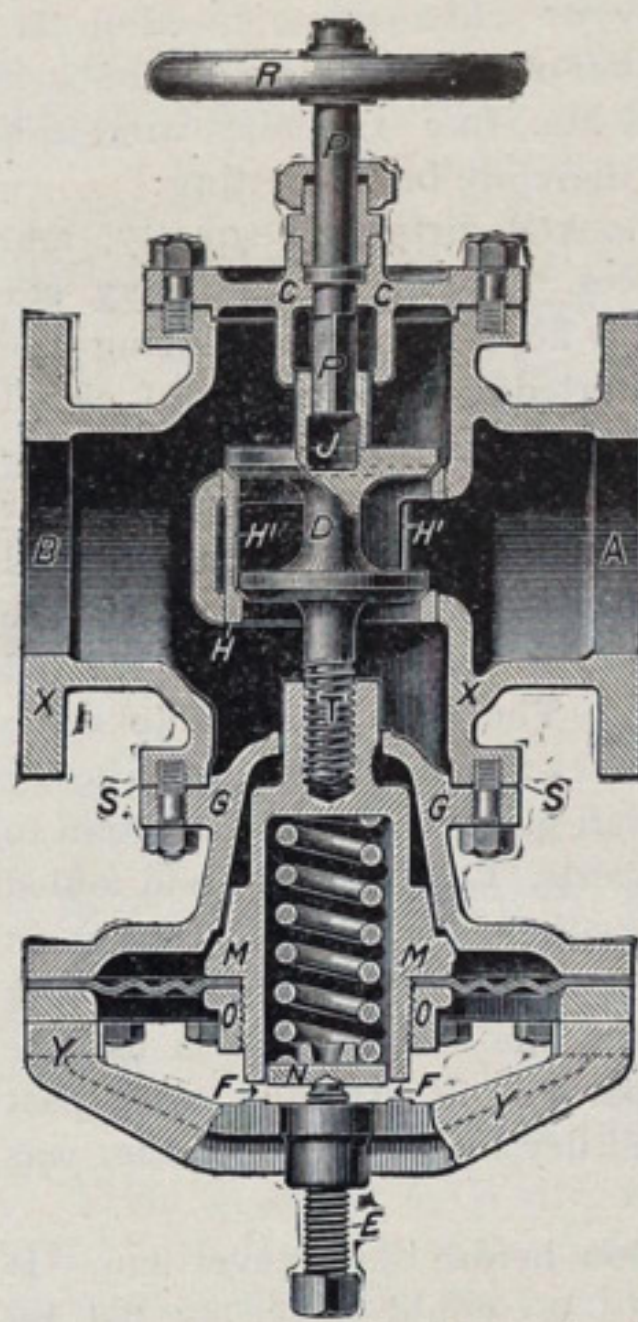
A British side-wheel steamer 310 feet long, launched recently by the Fairfield Ship Building & Engineering Company, has two rudders, one at the bow in addition to the ordinary one at the stern. It is claimed that this will add to the maneuvering efficiency of the vessel.



Judges Wallace and Lacombe of the circuit court of appeals Second circuit, a few days ago affirmed the decree of the district court, eastern district of New York, in a case of collision between sailing vessels. The collision was on the high seas on a clear morning between the ship Rolf and the bark Boyd. The Rolf was bound to New York and was sailing at least two points free, with the wind on her starboard side. The Boyd, bound from New York to Hong Kong, had the wind on her port side. Her contention was that she was sailing close-hauled. The Rolf's witnesses asserted that the Boyd also was sailing free. The Boyd did not alter her course. The Rolf put her helm up after collision was inevitable, but was struck on her starboard side. The decision which the higher court affirmed was to the effect that on the evidence the Boyd, as well as the Rolf, was sailing free, and hence, under the international collision rules, the Boyd was bound to avoid the Rolf, which had the wind on her starboard side, and was liable for her failure so to do.

Middleton vs. the John F. Winslow and the Moonlight is the title of a case decided recently by Judge Brown of the United States court, southern district of New York. The court's conclusions in the case were as follows: "The landing of a heavy vessel in a strong current or tideway outside of a light vessel, which is lawfully moored at a bulkhead, is wholly at the risk of a vessel so attempting to land, and she is liable for any injury she may inflict on the vessel at rest. Where a tug with a tow alongside attempts to land outside another boat, and both tug and tow concur in making the attempt, and a bad landing is made through the influence of both, both are responsible for any damage such landing may occasion."

Pressure Regulators.



Herewith is shown a cut of the Foster pressure regulator in use on the Virginia and other lake steamers. In addition to a large number of valves recently furnished for the battleship Maine, the Foster Engineering Company has just received an order for 21 of their steam pressure regulators for service on the armored cruiser New York. They are to be applied as follows: Six 2-inch for ash hoist, eight 2-inch for jackets, three 3-inch for winches, one 4-inch for vent blow, one 4-inch for steering engine, one 5-inch for dynamo and one 5-inch for steam windlass. These with the valves that are to be constructed for the coast defence ram and two cruisers under construction at the Bath Iron Works, together with large orders they are receiving from railroads and other sources, will task their new

factory at Newark, N. J., to the utmost.

It is significant that the contemplated improvements to certain of the Liverpool docks include the enlargement of their entrances to 100 feet wide and an increase in their size sufficient to accommodate vessels 700 feet in length. The tendency of the times is continually to build larger vessels.

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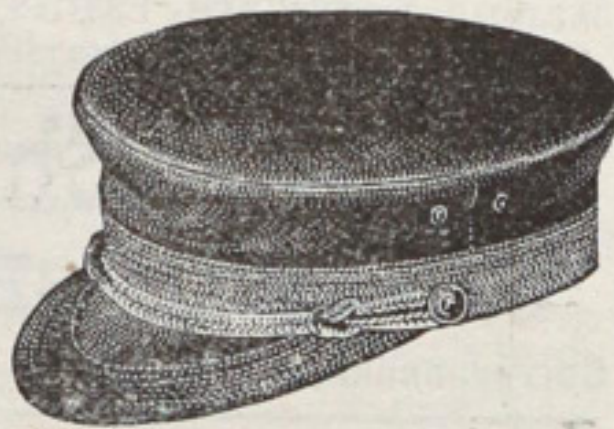
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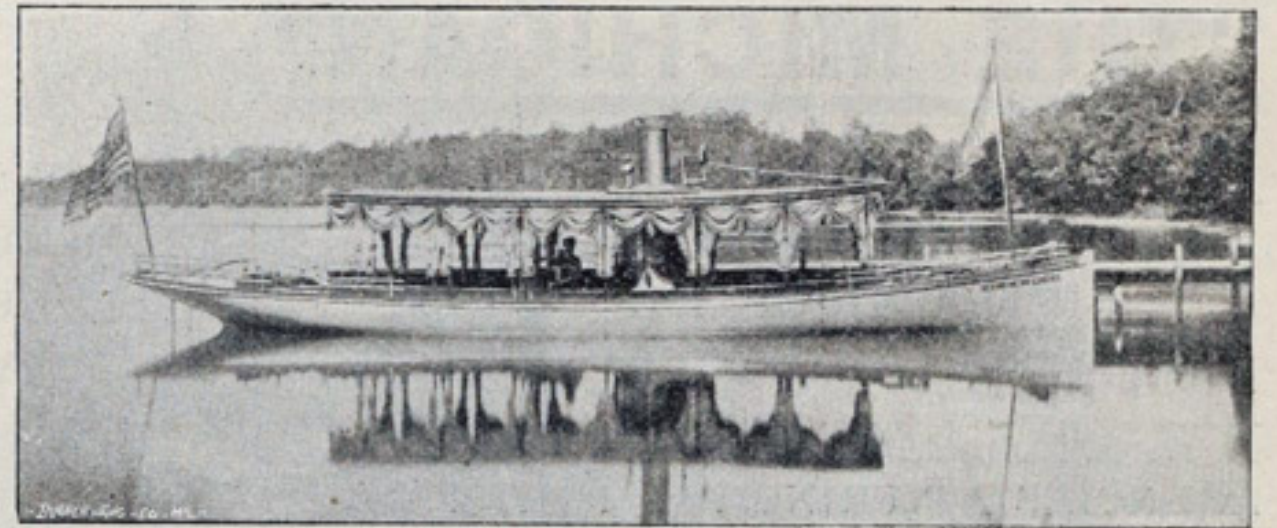
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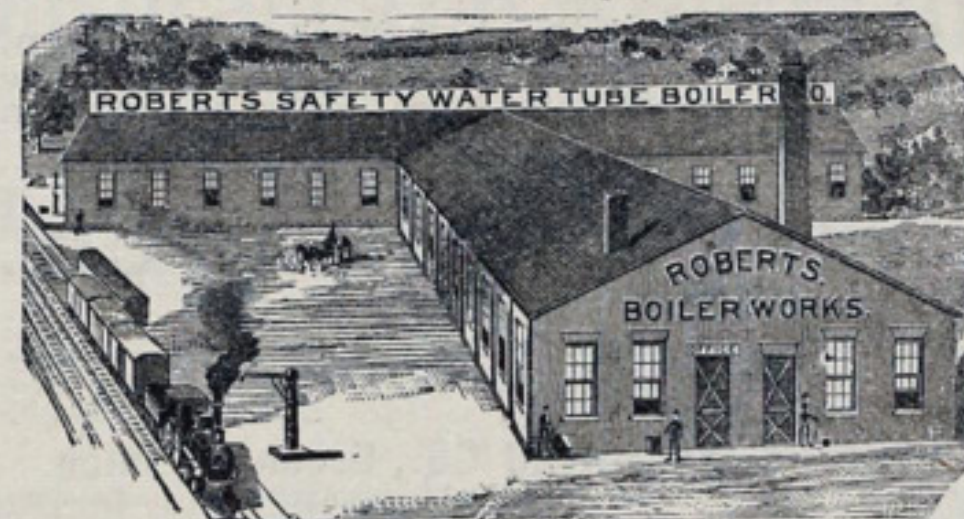
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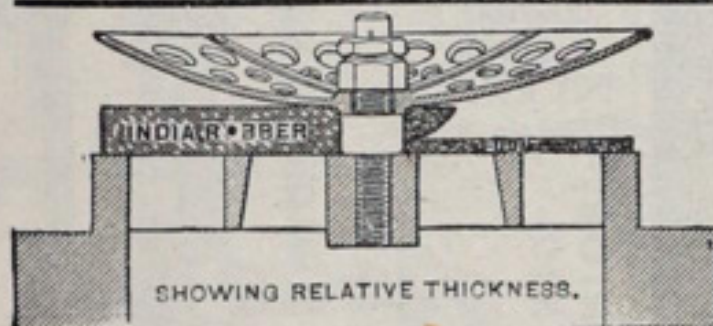
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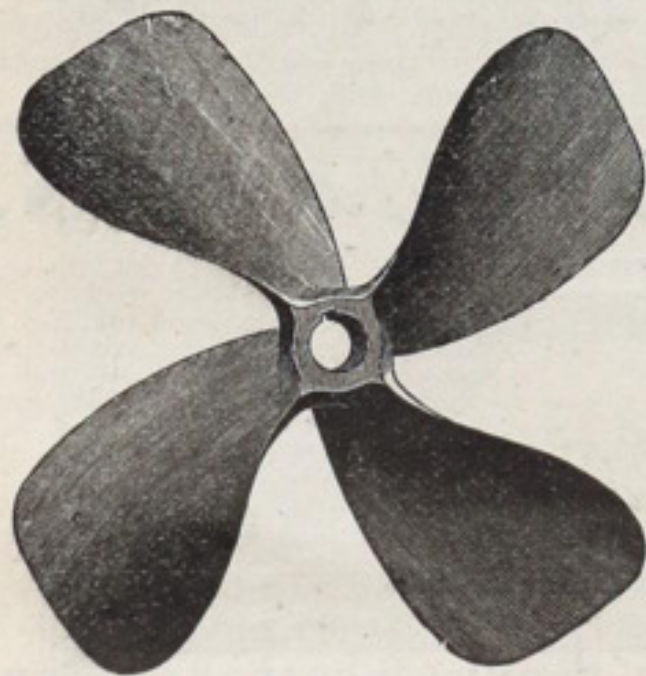
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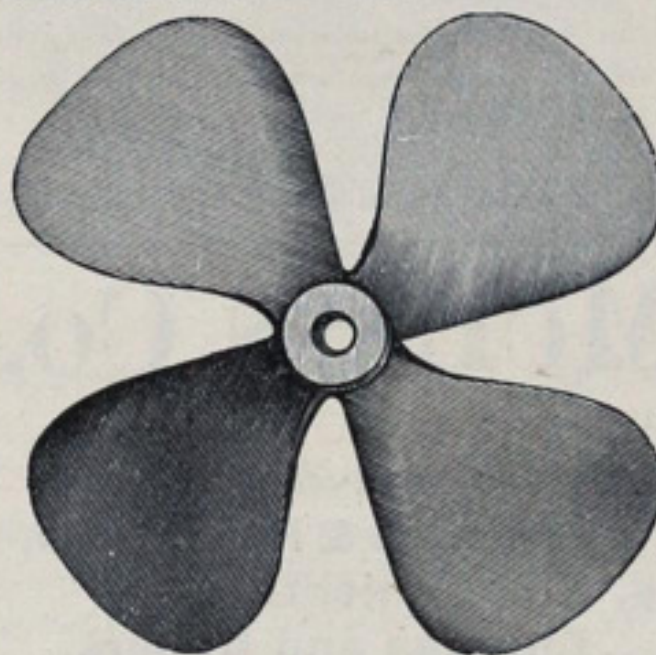
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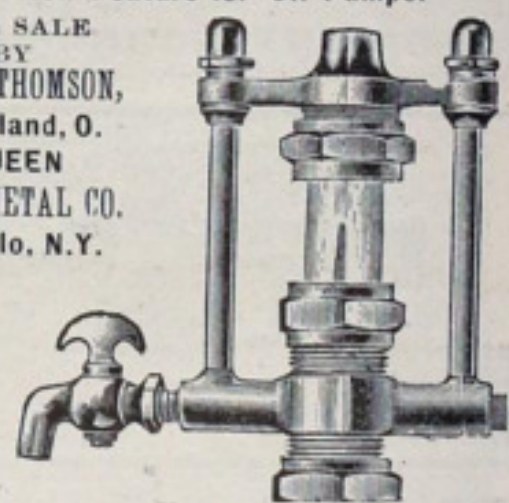


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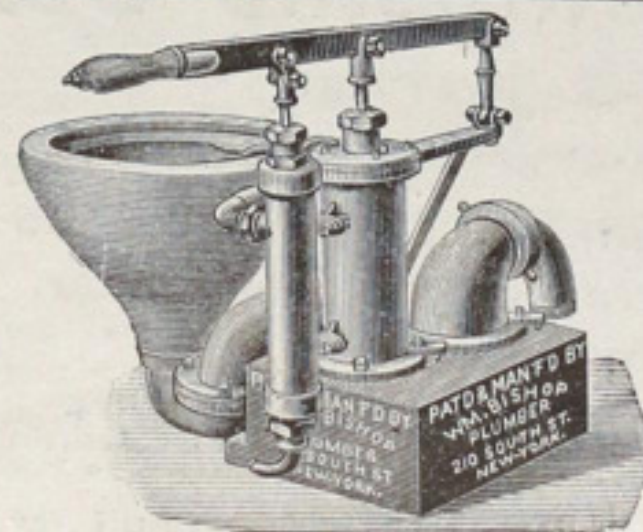
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
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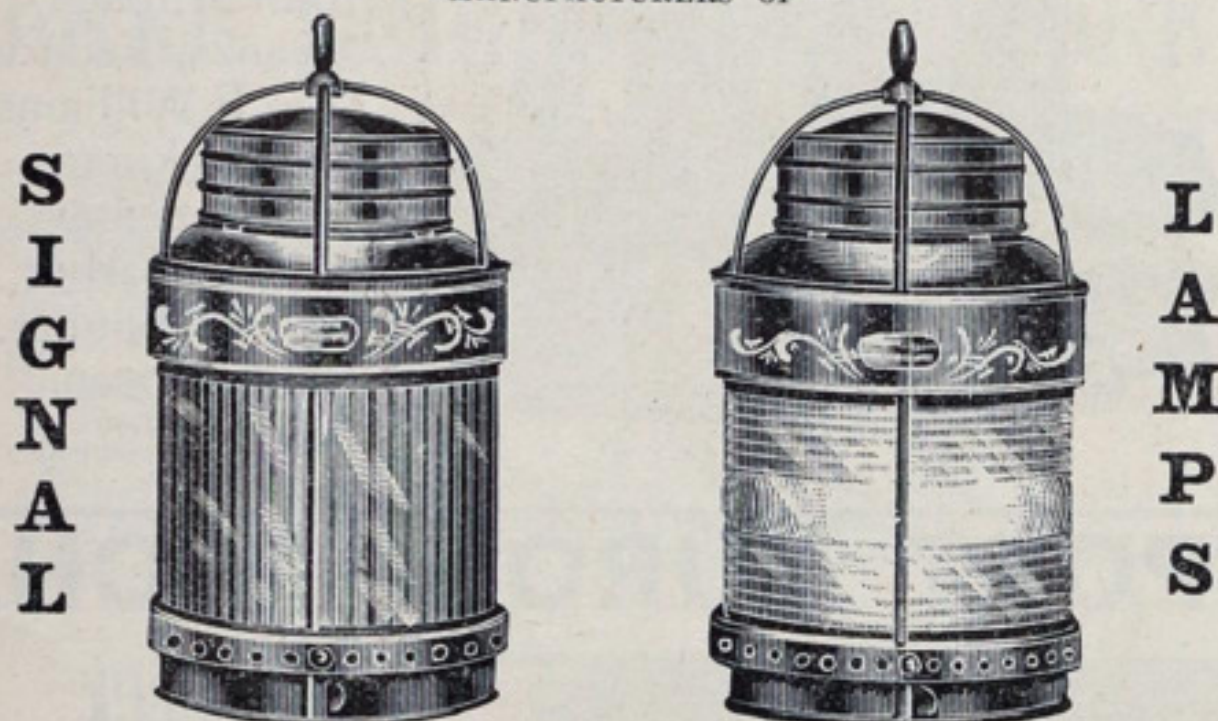
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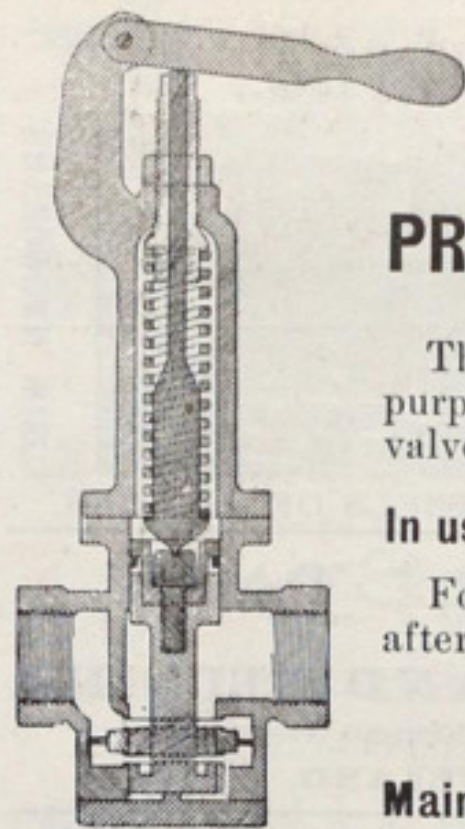
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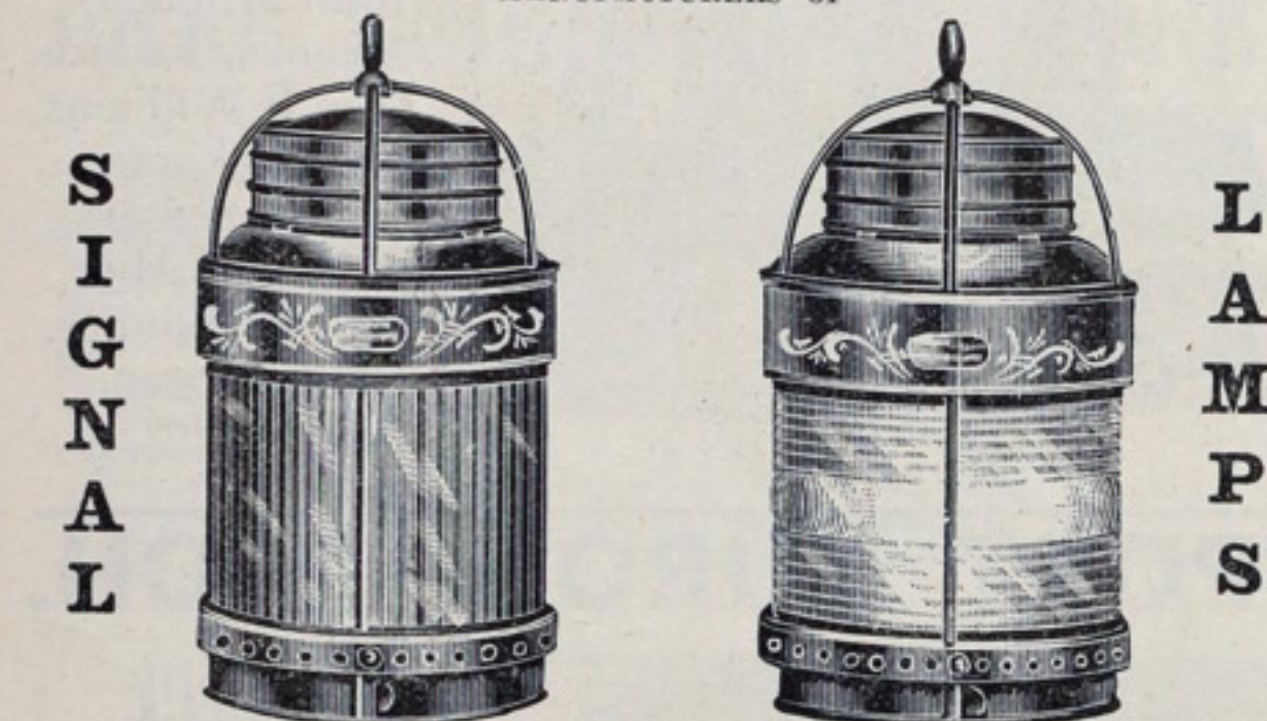
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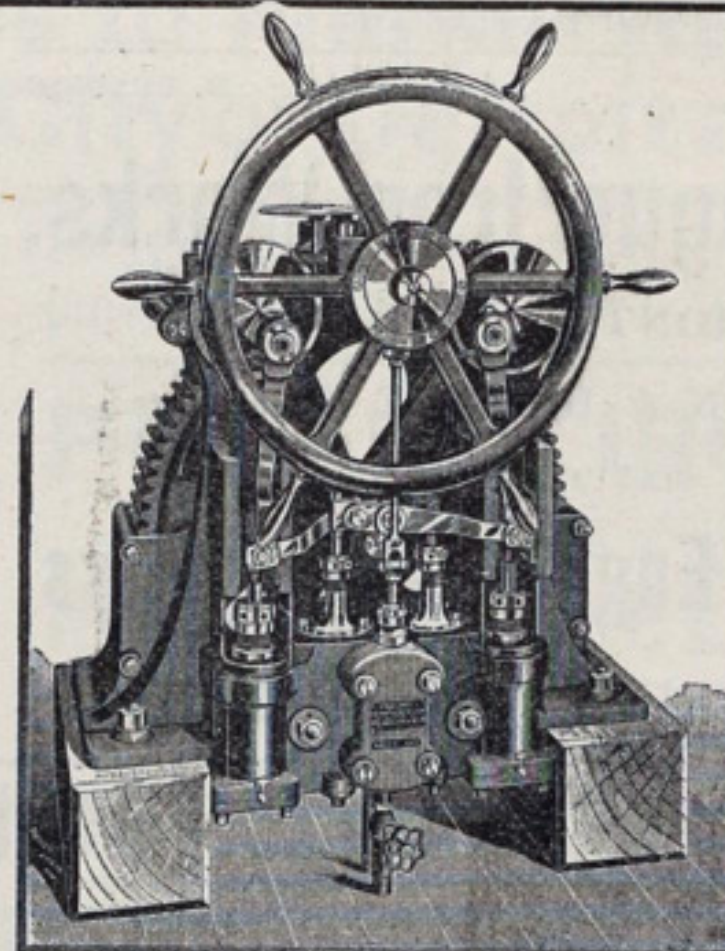
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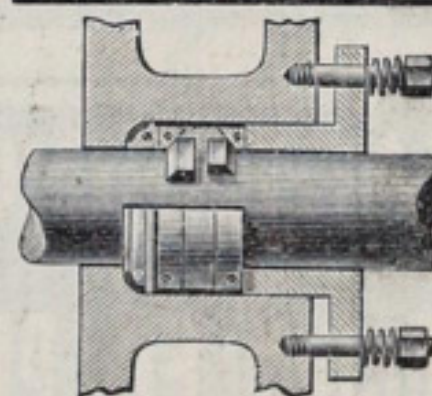
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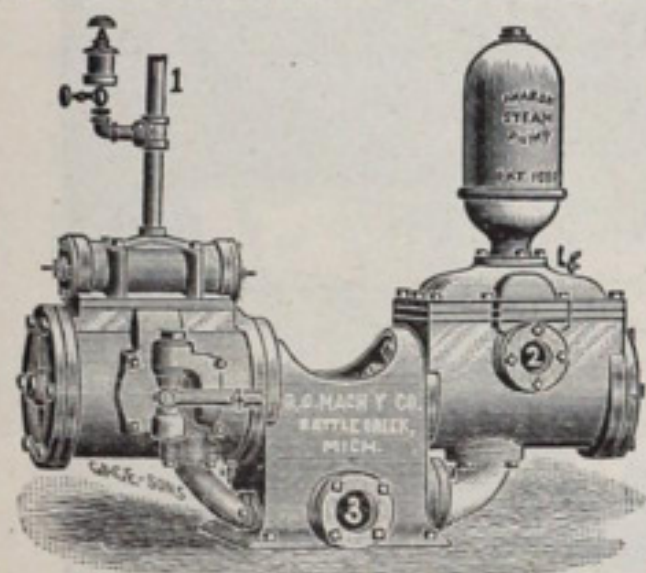
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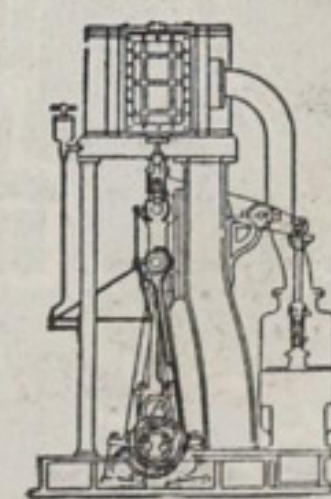
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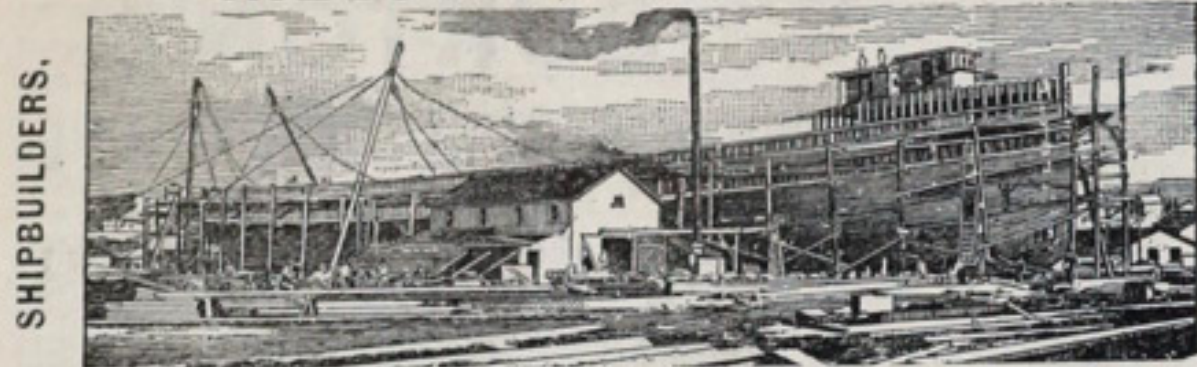
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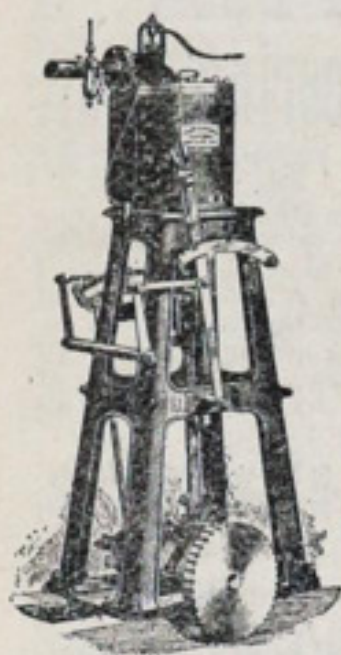
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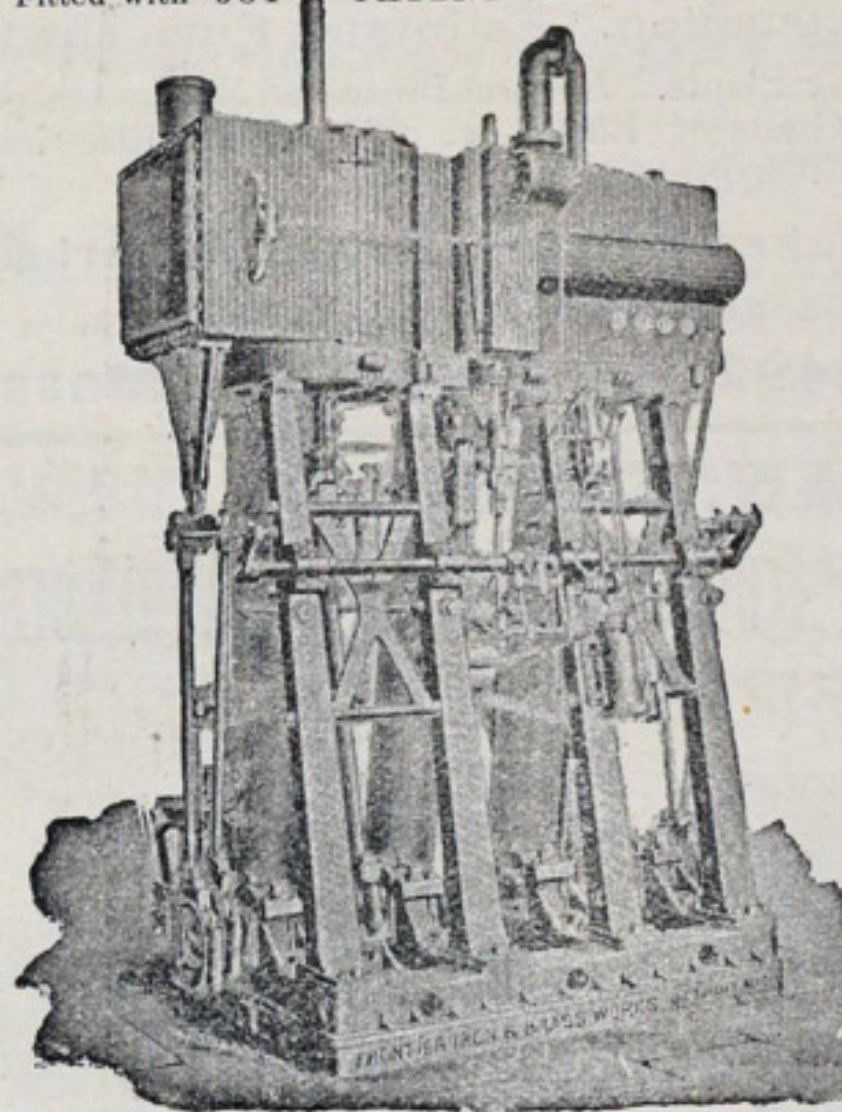
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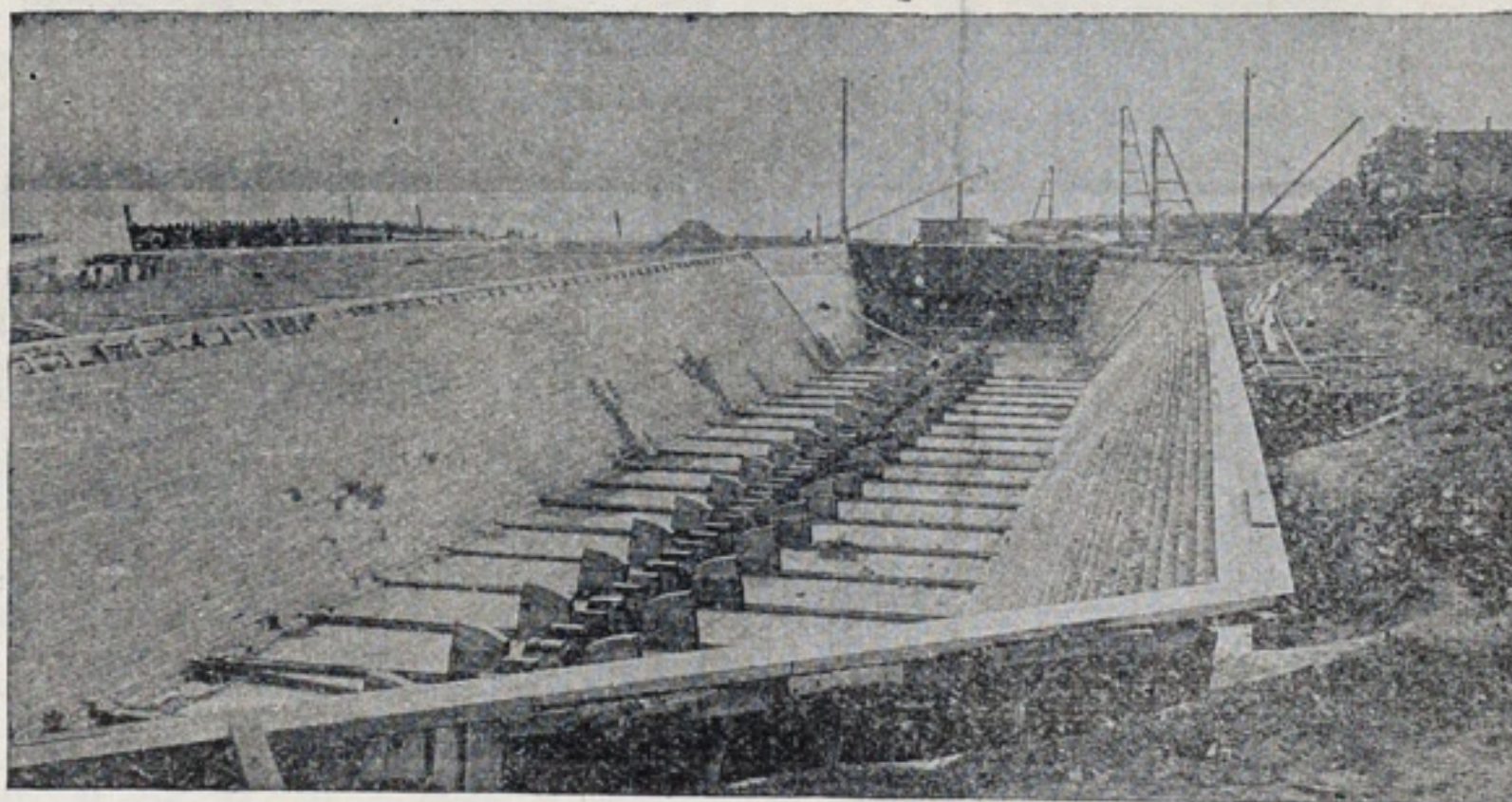
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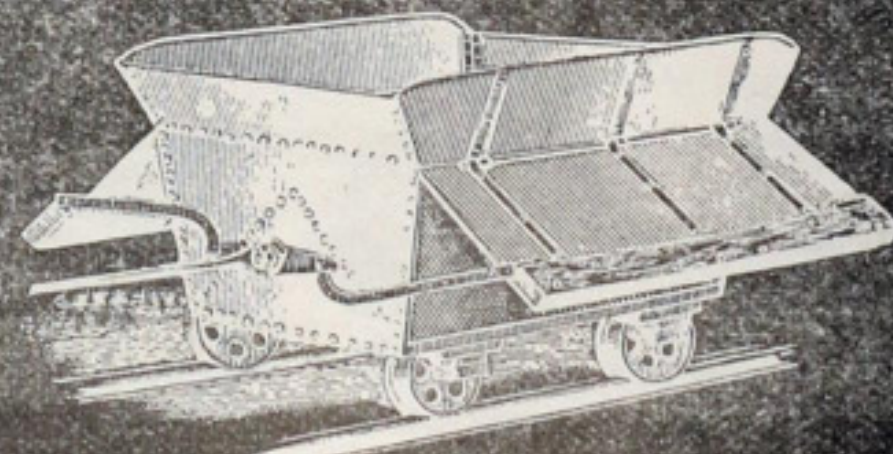
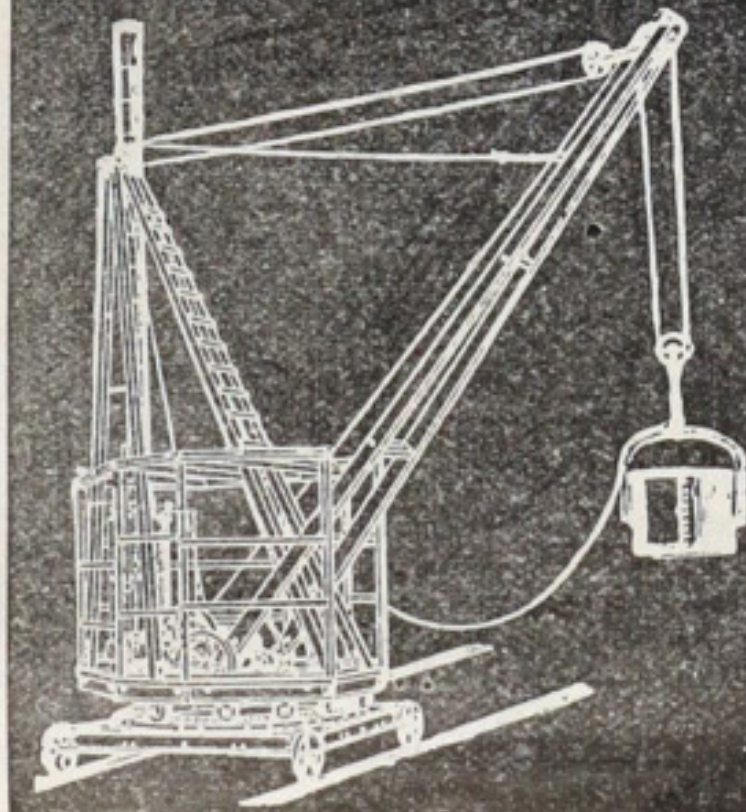
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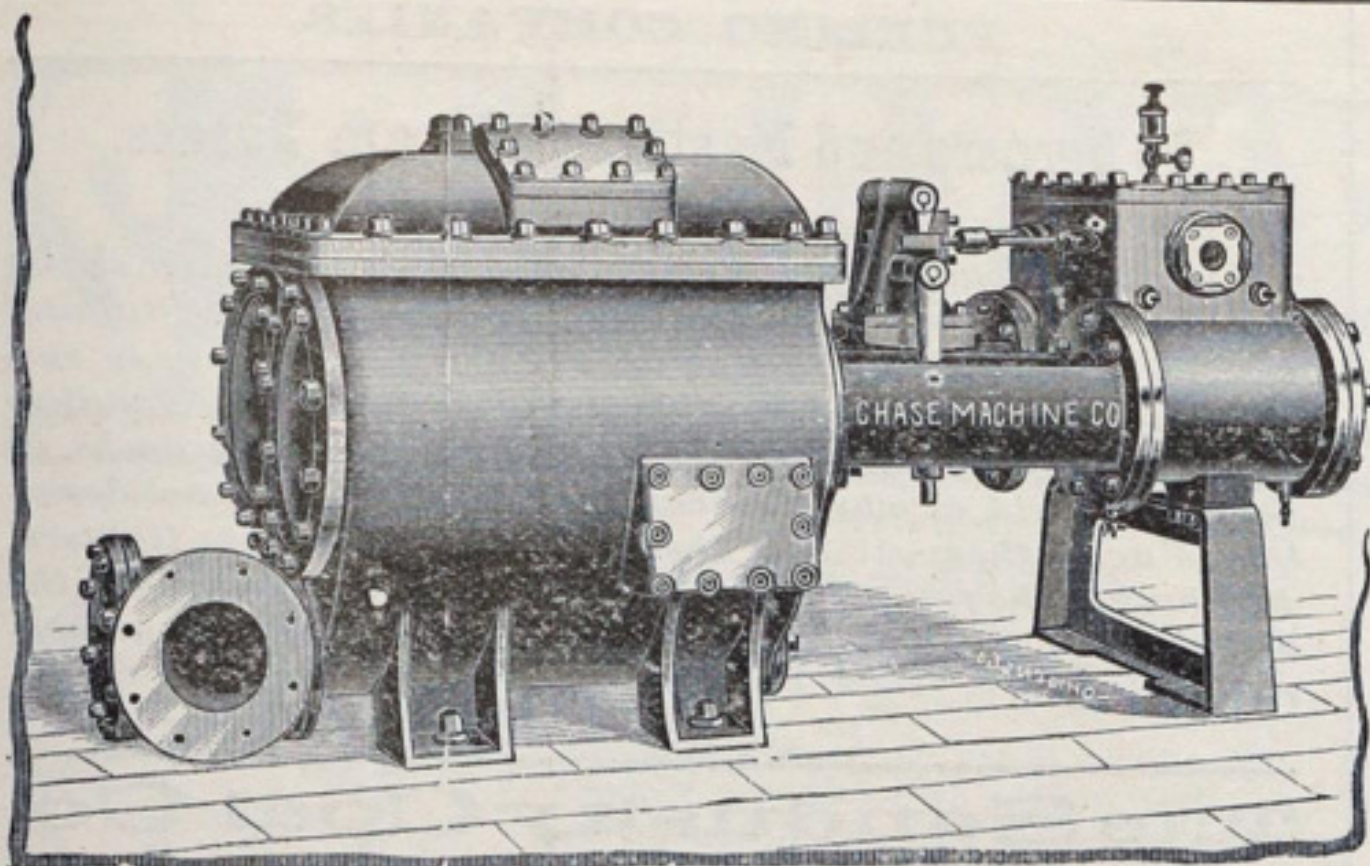
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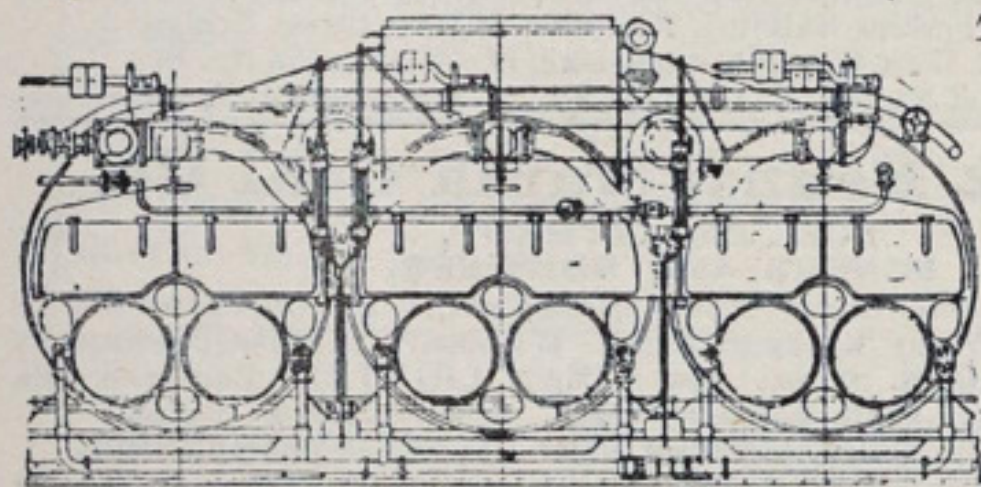
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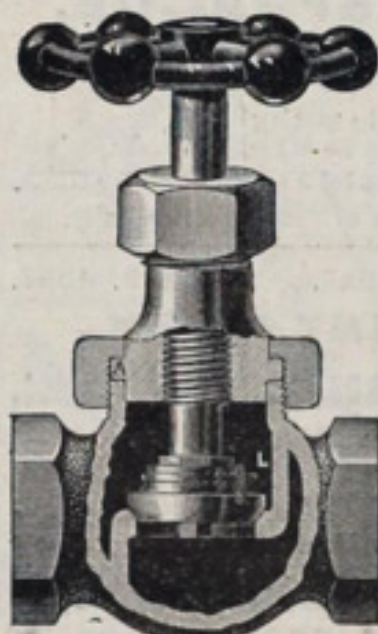
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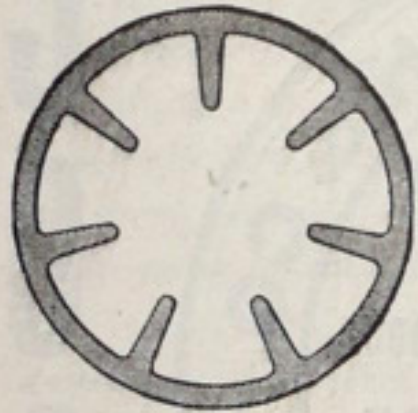
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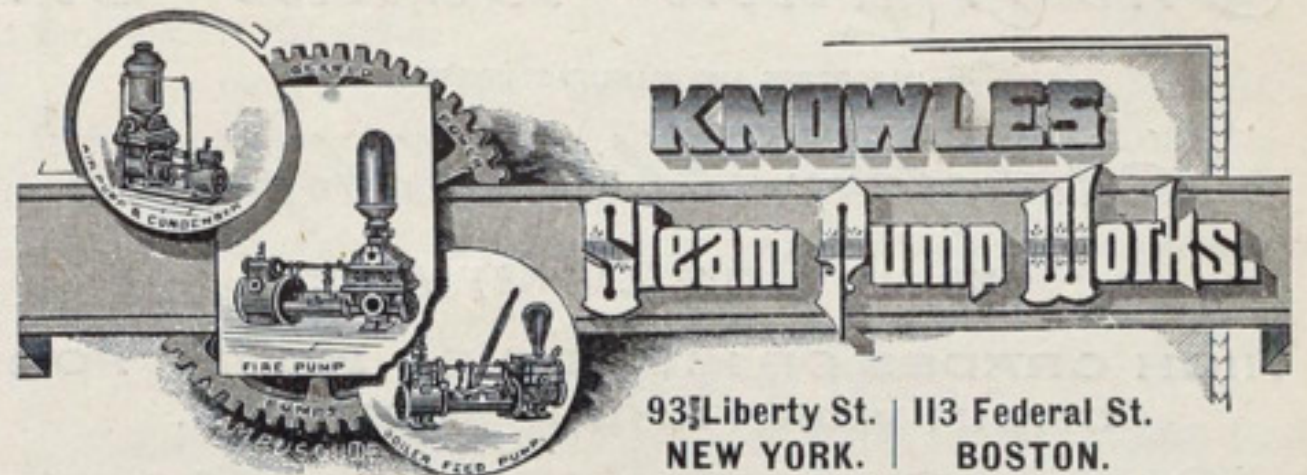
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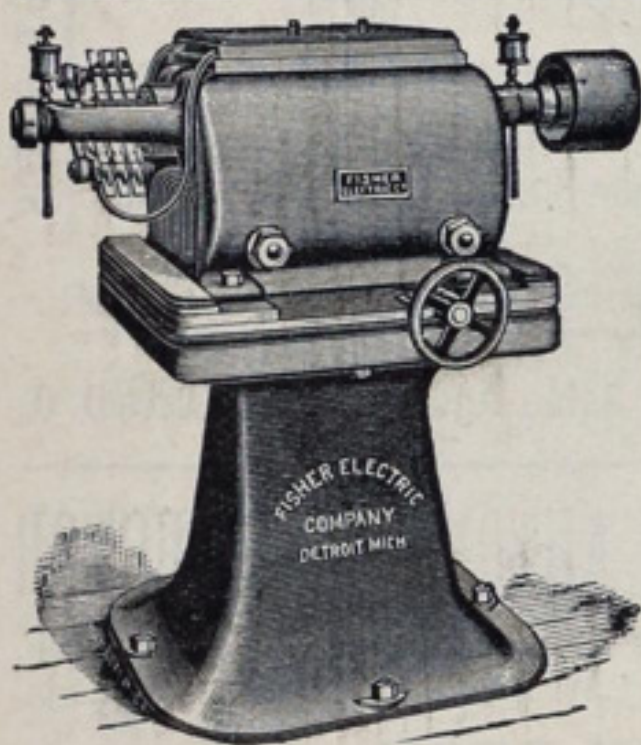
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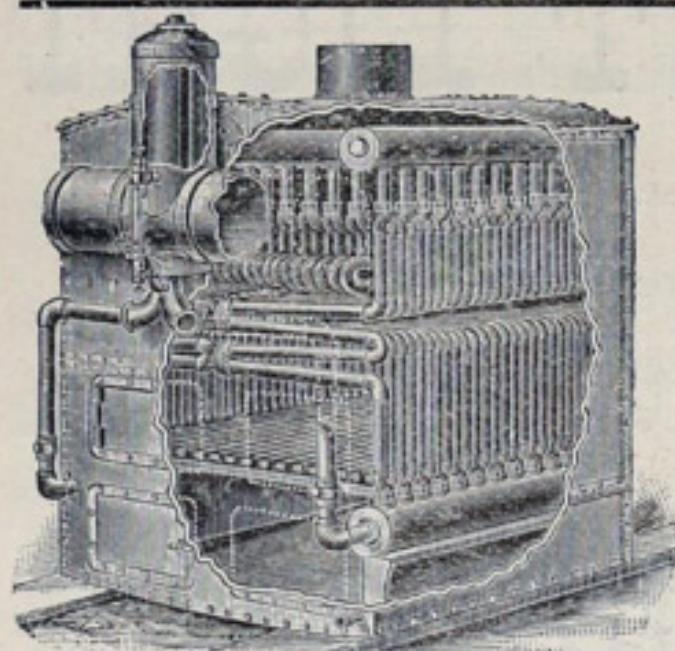
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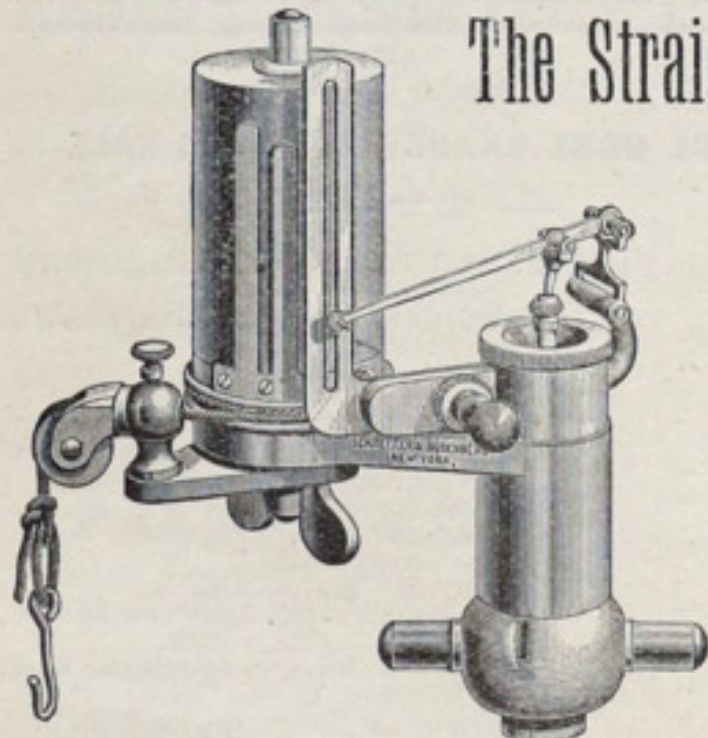
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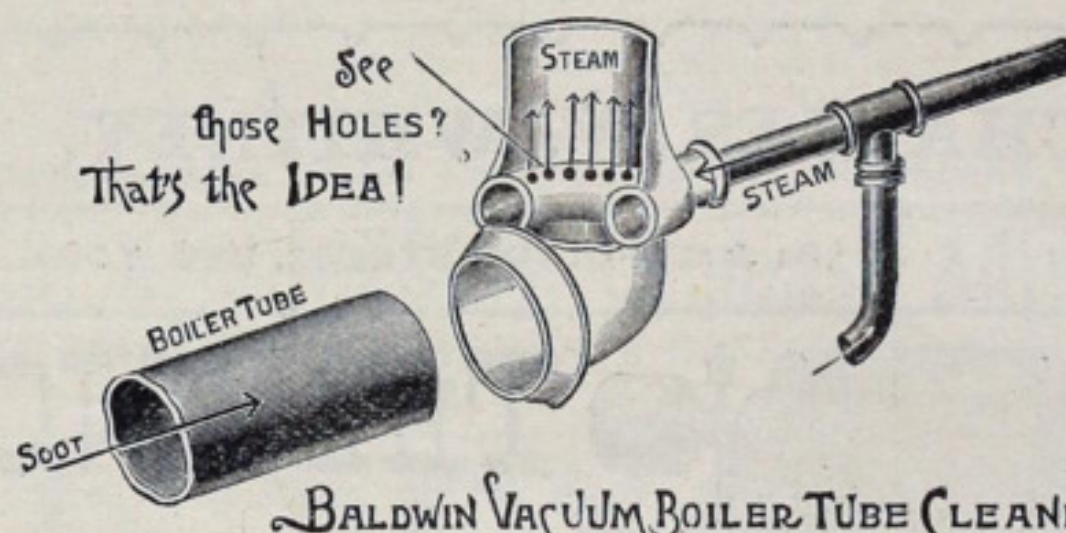
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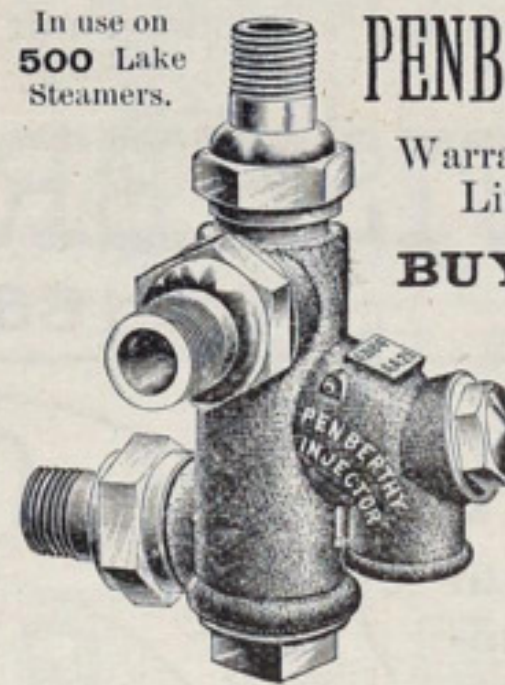
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